

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

INSOMNIA

I. ETIOLOGY

LOVELL LANGSTROTH, M.D. (516 Sutter Street, San Francisco).—If one questions a patient with insomnia as to why he or she cannot sleep, the answer invariably will be, "Because I cannot stop thinking." And this seems to be the fact. These patients cannot sleep because they have a compulsion to thought. This state may be brought about in a perfectly normal person by some unusual event; a disappointment in love, the death of some member of his immediate family, business reversals, or physical disease. But these normal persons recover from their physical disease or adjust to the new conditions in a reasonable time, and soon sleep as well as before, while the persons under discussion present no physical disease, have nothing serious to worry about, and still are permanently unable to sleep satisfactorily. In them the disturbance of function is traceable to an inner, rather than to an outer cause, and must be treated along psychological lines if it is to be permanently overcome. For drug therapy is not only unsatisfactory to the patient himself, but finally fails to give him the rest he craves. Discussing the etiology of insomnia, then, really means discussing the etiology of this compulsion to thought; and what I shall attempt here is to sketch in briefest outline the psychological processes which force these persons against their will to awake nights and "think."

An analysis of this process shows that the conscious will of the patient to sleep is opposed by this compulsion to thought, or by an opposing will, so that we find here two opposing will forces. The greatest light has been thrown on these will forces by Otto Rank,¹ who speaks of them as the positive and negative will. But to understand what is meant by these terms it will be necessary to review briefly the development of the will as he has sketched it in the individual.

We must remember, in this connection, that the individual was once a part of the mother from whom he sprang, and that in infancy at least, he always yearns for her and resents separation from her.² This state of affairs forms the basis for the development of two elemental forces in the individual, one of which we may call positive and the other negative. At or about puberty these more primitive urges become partly differentiated into the positive and negative will, that is to say they become more conscious and subject to control. The average person, then, takes on the pattern he is to

follow during the remainder of his life: he projects his opposing will onto some outer authority (parent, social will, government), and, now that he has delegated the job of restraining him to someone else, feels free to accept and express his positive will, and with it the racial sexual compulsion, or the positive primitive urge.

But there are certain strong-willed persons who differ fundamentally from the average in their inheritance and development. From birth on they have a stronger desire for union with the mother, and when separation from her is forced, resent it more: they hate the mother for causing them this pain. They also react in an exaggerated way to the pain of this separation, that is to say, instead of accepting it they deny the desire and its object altogether so as to save themselves pain. This is as much as to say: "I do not care, I did not want it anyway." The average person denies desire, too, but only until the intensity of the pain of separation has diminished, while these strong-willed persons continue the denial indefinitely. This does not change the true state of affairs, of course: the strong desire and hatred are still there below the surface. Later on these more primitive forces differentiate into will forces, but the denial is carried over into the realm of the will, prevents the individual from coming into positive affective relation with the object, *i. e.*, prevents his psychological growth, and so the will retains its primitive negative form. Any expression of this negative will is condemned by the parents as badness, and this parental attitude gives the individual another reason for denying his will, *i. e.*, for saying in effect: "I am not bad, I have no will at all." Since the will represents the person's individuality, and his happiness depends on his acceptance of his individuality, this denial becomes of great psychological significance. Thus we see that in certain strong-willed persons the will remains predominantly negative and is denied, that is, cannot reach consciousness. But the will continually strives to break down this barrier and appear in consciousness. Here, then, are two opposing forces, consciousness and the negative will, each striving to overcome the other. Of course, the situation is not quite as simple as this; the oversimplification is for the purpose of giving the general idea. I have used the word "predominantly" negative to signify that the will was not completely negative. In many of these strong-willed persons the aberration is too slight to make a major disturbance in their life. But their feeling tone is poor and they do not really enjoy life. Their will tends to oppose their own normal functions (life), as it opposes everything in the outer world, not enough perhaps to make life impossible, but enough to make it unhappy.

¹ Rank, Otto: *Wahrheit und Wirklichkeit*. Leipzig und Wien: Franz Deuticke, 1929.

² Rank, Otto: *Grundzüge einer Genetischen Psychologie*. Leipzig und Wien: Franz Deuticke, 1927.

In others the aberration is sufficient to cause a psychoneurosis. Some psychoneurotics, the hysterical type, succeed in keeping all knowledge of the real state of affairs out of consciousness, but transform their suffering into physical symptoms. Others, the compulsion neurotic type, allow the will to reach consciousness as thought.

Let us now return to our discussion of the patient with insomnia. We see that his desire to sleep is an expression of his positive will to live, and his compulsion to thought an expression of his negative will. Since this compulsion to thought preponderates, we must infer that this person's will is predominantly negative and that, whether he admits it or not, he is a borderline psychoneurotic, or actually a psychoneurotic.

This is not the place to discuss the psychological treatment of these individuals. Suffice it to say that proper understanding of the strong-willed person, and of the principles laid down by Rank for therapy of the neuroses, makes it possible to permanently cure the larger part of these patients.

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II. PATHOLOGY

THOMAS G. INMAN, M.D. (2000 Van Ness Avenue, San Francisco).—Any discussion of the pathology of insomnia must include those conditions responsible for the inability to secure normal sleep, since it is extremely doubtful if insomnia exists as a separate clinical entity. Inactive states are common to all living things, animal or vegetable, simple or complex, and serve to allow, after the expenditure of stored-up energy, a return to a state of stable equilibrium. Sleep, as we know it, in complex organisms, is a provision of nature devised to produce a more or less inactive state of the whole body in order that wasted tissues may repair themselves. The accompanying phenomenon, which we know as unconsciousness exhibited by higher forms, is due to the same inactive state of the upper nerve cell groups, chiefly, in man, the cerebral cortex.

The existence of a sleep center within the brain has been the subject of much discussion, especially since the encephalitis epidemic of 1917-1920. The concentration of the effects of the virus of this disease in the neighborhood of the midbrain and basal ganglia, with the almost constant somnolence, suggested the possibility that there might be located in this region some group of cells which controlled the sleep mechanism. It would seem to be in keeping with nature's efforts in the conservation of energy that some such control should develop in complex organisms in order that all structural units might be brought under control at the same time. However, it cannot be stated positively that such a center actually exists.

Pathological Anatomy.—Disease processes within the cranium may cause insomnia, but usually only in the beginning stages. In tuberculous meningitis, sleeplessness or restless and troubled sleep may be the first noticable symptom. On such a basis sometimes rest the "night terrors" of children. Septic meningitis and lethargic encephalitis

frequently cause a few sleepless nights at the beginning of the illness. Cortical parenchymatous syphilis, cortical atrophy due to arteriosclerosis and decortication from any cause notoriously disturb the sleep cycle.

Tumors developing within the cortical sensory projection centers may, by stimulation, arouse the respective images common to that region and make sleep impossible. With the increase in intracranial pressure, however, or when tumors or inflammatory disease invades the region of the third ventricle, somnolence is the rule.

Pathological Physiology.—Increase in the rate of blood flow through the brain, brought about by various causes such as hyperthyroidism or an increase in the activity of other glands of internal secretion, may be the cause of obstinate sleeplessness. Some of these hormones act upon the cortical cells directly lowering the threshold of irritability.

There is a class of individuals who, in the absence of any special disease, are poor sleepers. They usually possess a more or less unstable vasomotor system to which may be added a volatile emotional nature. With them may be grouped the so-called visceroptotic type. The long body, small, central heart, low-lying abdominal viscera and poorly developed musculature lend themselves to a poorly sustained systolic pressure when standing. On assuming the horizontal position the blood is more evenly distributed, and the cerebral circulation takes on the character belonging to the waking period. Thus, tired and sleepy before retiring, once they are in bed they become wide awake and, like Achilles, bemoaning the death of Patroclus, lie first on one side, then on the other, now on the back, now on the face. Only when circulatory readjustment takes place do they fall asleep.

Pathological Psychology.—Under this heading most of our patients whose chief complaint is the inability to secure sufficient sleep may be placed. There are two main groups, the neuropathic and the psychopathic. In the former, mental conflicts cause psychovisceral reactions which, activating circulatory and glandular modalities, stimulate cortical cellular interplay within the sensory centers. Thus, phantasy formation, anxiety, real and imaginary fears and feelings of resentment prevent that relaxation without which sleep is impossible.

The various psychoses are frequently marked by obstinate sleeplessness, but the associated mental state soon makes itself known. There is one group, however, in which the underlying cause is not so readily apparent. It comprises those mild, sometimes recurrent, depressive states in which insomnia is frequently the only complaint. Observation will detect the gloomy aspect, and questioning elicit the fact that the mood is sad and pessimistic; that they are emotionally depressed, have no appetite and are unable to obtain any pleasurable feeling from the pursuit of those occupations and hobbies which they formerly enjoyed. These symptoms, which mark the underlying psychosis, are often overlooked because of the reiterated statements of the patient that he would be all

right if he could only sleep. Aside from pointing the way to suitable treatment, early recognition of the true state of affairs is necessary, for any sudden deepening of the psychosis may usher in that most important symptom—the impulse to suicide.

It cannot be stated positively that loss of sleep *per se* leads to any pathological alteration in the tissues of the human body. Chromotolysis has been observed within important cellular groups in the central nervous system in animal experiments. The findings, however, may not depend wholly upon a disturbance of the sleep mechanism, but upon associated phenomena.

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III. TREATMENT

H. DOUGLAS EATON, M.D. (1136 West Sixth Street, Los Angeles).—Sleep, nature's preventive for excessive fatigue, is an involuntary habit. Insomnia is a disturbance of the sleep habit, and may occur in varying degrees in a multitude of diseases or simply as a result of bad sleep habits. Insomnia is a symptom, not a disease; and its adequate treatment is dependent on ascertaining the cause for its existence with elimination of this underlying condition. When the fundamental cause cannot be removed, or while it is being corrected, symptomatic treatment of the insomnia is often of great benefit to the patient. In a certain percentage of cases, relief of insomnia may be the determining factor in the patient's recovery.

In organic disorders, when the lack of sleep is directly due to severe and continuous pain, analgesics may be combined with hypnotics to give the patients the periods of relief from pain and the mental oblivion so essential to their recovery. The milder, less depressing, drugs should be tried at first. The combination of salicylic acid with moderate doses of some of the barbiturates is often sufficient. In more severe cases the opium derivatives, alone or combined with hypnotics, are justifiable. Codein or morphin combined with a barbiturate suffices in a large percentage of cases. Hyocin and morphin, in the familiar HMC combination, is a still more potent preparation. The intramuscular route of administration is most efficient when quick results are desired. Intravenous medication is, in the writer's experience, neither desirable nor necessary. Physiotherapy, especially hydrotherapy, may be considered, but is usually impractical in this group of cases. Its detailed discussion will be reserved until later.

Toxic causes are prime offenders in the production of insomnia. Coffee in excess, or even very moderate amounts of coffee in susceptible individuals, is a well-recognized sleep disturber. Alcohol or the excessive use of tobacco; tea, dietary indiscretions, the lack or overabundance of physical exercise, may cause insomnia. Some drugs, of which a notable example is benzedrin sulphate, easily upset the sleep habit. Insomnia is a frequent symptom in infectious diseases, acute or chronic. Obviously, the successful treatment of insomnia so produced depends on elimination of its toxic cause. While this is being accomplished, symptomatic treatment of the insomnia is often indicated.

In this group of cases hydrotherapy holds a definite therapeutic place. The warm bath, starting the first night at 98 degrees and reducing a degree nightly to 90 degrees, is often very satisfactory. As the bath exerts its sedative and hypnotic effect through redistribution of the blood supply, it is essential that the patient be transferred from the bath to a warmed bed, and not allowed to become chilled in transit if good results are to be obtained. If a tub bath is not practicable, the bed pack may be given. Here, when the mattress is protected by rubber sheeting, the patient is wrapped in a sheet, wrung out in tap water, then in two layers of blankets. With the use of the tub or pack, cold compresses or an ice-bag to the head, may be used. Either tub or pack may be continued under supervision from thirty minutes to an hour or longer, depending on the patient's reaction.

Aside from hydrotherapy, the use of the milder hypnotics may be necessary. Many patients will sleep with the aid of bromid alone. The accumulative effect of this drug, as well as the marked individual variations in susceptibility to it, must always be borne in mind. Of the older drugs, chloral hydrate is of value. Paraldehyd is a relatively safe hypnotic and of special value in insomnia due to alcoholism. Its use is limited by its disagreeable taste and odor. There are at the present time a large number of barbiturate preparations on the market which, when used in moderation and under medical supervision, are satisfactory hypnotics for short periods. The possibility of a barbiturate habit must be guarded against. The scope of this discussion does not permit a detailed résumé of these preparations.

In the psychoses, insomnia is often an intractable and serious symptom. In this group, hydrotherapy is an extremely valuable therapeutic procedure. As most of these cases are under treatment, where the continuous bath is available, this should be first choice. The continuous bath is best given at body temperature, and it should never be given at more than one or two degrees above this. It should always be given under constant expert supervision, and any form of mechanical heat control of the water should be checked frequently by other means. The bed pack, given as previously described, is also of great value. Either continuous bath or pack may be continued for hours in suitable cases under strict observation. In severe excitements, hydrotherapy must often be combined with the use of sedatives and hypnotics. Here the barbiturate group alone, or combined with regular daily bromid administration, is of great value. Chloral alone, or combined with a barbiturate, is often satisfactory. Paraldehyd is especially valuable in the alcoholic psychoses. Finally, recourse may be had to hyoscin alone or combined with morphin in HMC's. The mode of administration depends on the patient's accessibility. Mouth and rectal administration may be tried. Recourse to the nasal tube or intramuscular injection is frequently necessary. Intravenous introduction need not be considered.

Insomnia is such a common symptom in functional nervous disorders that one rarely sees a

psychoneurotic who has not suffered from some degree of sleep disturbance at some time during illness. Here psychic causes are in the ascendancy, and successful therapy is dependent upon their elimination. Nervous insomnia is not simply a disturbance in sleeping, but a mental state colored by fear and anxiety in regard to not sleeping. Therapy should be primarily reeducational in type. Rationalization of the situation, combined with the correction of faulty habits of living, and especially of rest and relaxation, often suffices without medicinal aid. Hydrotherapy, especially the moderately warm bath previously described, is of definite value. Massage, preferably given shortly before bedtime, is helpful in a definite percentage of cases. The milder hypnotics are permissible only as an aid to psychotherapy and must be rigidly supervised and controlled. The habit of dependence on drugs is exceedingly easy for the psychoneurotic to acquire and frequently results in more harm than the sleep disturbance.

Principles in Procedures in Treating Syphilis:

1. Treatment of early syphilis should be continuous.
2. Spinal fluid examinations should be made routinely at the end of the first year of treatment and as indicated at any time.
3. Complete physical examinations with special attention to the cardiovascular and nervous systems, and including suitable laboratory tests, should be routinely made at least at the beginning of treatment.
4. Patients having suspicious lesions which are found to be darkfield negative, should be followed up by a series of serological tests at suitable intervals, and no local or constitutional treatment should be administered until the diagnosis has been established.
5. Minimum treatment required:
 - (a) To render patient noninfectious, twenty standard doses of an arsphenamin and twenty doses of bismuth administered by the continuous method of treatment.
 - (b) To "cure" the patient: One year of treatment after the patient has become and remained clinically and serologically negative (including spinal fluid).
 - (c) All patients having syphilis should be examined for gonorrhea. All patients having gonorrhea should be examined for syphilis.
 - (d) Epidemiological service by trained personnel should be adequately provided to supplement the efforts of the doctors in:
 - (a) Seeking to trace the sources of infection.
 - (b) Bringing in the contracts of patients for examination.
 - (c) Holding patients long enough under continuous and adequate treatment.
 - (d) Thorough personal instruction of patients to assure cooperation.

Management of Syphilis in Pregnancy and Congenital Syphilis

1. Every pregnant woman should have a medical examination as early as possible in pregnancy, this examination to include adequate history, clinical and serological examinations for syphilis.
2. Every pregnant woman should have at least one complement-fixation test and one precipitation test for syphilis, and these tests should be reported when negative or doubtful, if there is any reason in the history or clinical findings to suspect syphilis.
3. Treatment of syphilis as a complication of pregnancy should start as soon as a diagnosis is made, should continue through pregnancy to delivery. Treatment should begin and end with the arsenical; if pushed for time, use combined treatment—bismuth with the arsenical.

4. A syphilitic woman should be treated in every pregnancy regardless of previous treatment, and regardless of negative serological findings. Even a few doses of arsphenamin late in pregnancy are better than no treatment at all.

5. Treatment should be continued after delivery for the benefit of the mother.

6. Every child of a syphilitic woman, and the woman's husband, should be examined for syphilis and treated, if indicated.

7. The child born of a syphilitic woman should not be treated "on suspicion," but only after a definite diagnosis has been made, and treatment should be started as soon as a diagnosis is made. The earlier a congenital syphilitic child is treated for syphilis the better, and the treatment must be prolonged.

8. The new-born child of a syphilitic woman, even though the mother has been treated, should be followed with frequent serological, clinical and x-ray examinations. This periodical supervision should extend, if possible, until the seventh year.

9. The stigmata of congenital syphilis should be kept in mind by all who examine children. When a suspicious defect is seen, a careful study, including blood, x-ray examination, and spinal fluid serology, should be made.

10. Even late congenital syphilis benefits by treatment in the vast majority of cases.

"The conception is sometimes held that when the signs of meningeal irritation are demonstrable, one can conclude that the patient is suffering from a meningococcus infection. Such deductions are often incorrectly drawn. Merely on the basis of probabilities, one would be more apt to be correct in diagnosing tuberculous meningitis than any other type of meningitis in a given case, since this is the most common cause of meningeal irritation, except in epidemics of meningococcus infections.

"Meningeal irritations may be caused by (a) bacteria of any kind, no matter how rare, but most often by staphylococci, streptococci, meningococci, tuberculosis or influenza bacilli, and mixed organisms, including the colon bacilli; (b) toxins produced by such organisms as B. tetanus, influenza, probably pneumococcus and B. tuberculosis; (c) viruses causing encephalitis, poliomyelitis, aseptic meningitis, idiopathic encephalitis, postvaccinal encephalitis, encephalitis associated with measles, chickenpox encephalitis and others of similar type; (d) occasionally, as the result of mechanical condition such as blocks and vessel thromboses, inflammation of adjacent cranial bones, subdural and spontaneous subarachnoid hemorrhages, more rarely as the result of edema, tumor, etc.; (e) occasionally, as a result of changes in the brain associated with lead poisoning, etc."—*Ohio Health News*.

Mechanism of Emotion.—Papez attempts to point out various anatomic structures and correlated physiologic symptoms which, taken as a whole, deal with the various phases of emotional dynamics, consciousness and related functions. It is proposed that the hypothalamus, the anterior thalamic nuclei, the gyrus cinguli, the hippocampus and their interconnections constitute a harmonious mechanism which may elaborate the functions of central emotion as well as participate in emotional expression. It is an attempt to allocate specific organic units to a larger organization dealing with a complex regulatory process. The evidence presented is mostly concordant and suggestive of such a mechanism as a unit within the larger architectural mosaic of the brain. The structures described here are usually represented as dealing with some phase of the olfactory function. There is no clinical or other evidence to support this view. Emotion is such an important function that its mechanism, whatever it is, should be placed on a structural basis. The organization presented here meets adequately the physiologic requirements proposed by Cannon and Bard with respect to the theory of emotion based on diencephalic-cortical processes. It is also in agreement with the observations of Dandy that the seat of consciousness is located somewhere near the midline, between the limits set by the corpus callosum and the basal structures of the brain.—*Archives of Neurology and Psychiatry*.